INDEX TO ILLUSTRATIONS.

America Nebula near Alpha Cygni, Plate XVIII op. page 509
Amherst's New Observatory 362
Apparent Path of Eros among the Stars Sept. 20, 1900 to Jan. 6, 1901 154
Astrographic Equatorial at Greenwich, Plate XXIII op. page 634
Borrelly's Comet, Plate I op. page 1
Brooks' Comet, Plates II and III, op. pages 2, 3
Cincinnati Observatory's New 16-Inch Telescope, Plate XII op. page 437
Comet *a* (1904) and Planets Earth, Mars and Jupiter 414
Comets' Tails pages 1, 2, 3 4
Comparison Stars near X Aurigae 211
Constellation Maps 56, 134, 203, 273, 348, 411, 482, 557, 619, 669
Corrections to Curvature of the Earth, Chart of 451
Cyclonic Sunspot of 1892 31
Diagram of Glass Diaphragm 657
Double Canals and Separative Power of Glasses 576, 577
Drawings of Mars 368, 371
Duplex Micrometer 657
Eclipse of March 16, Annular 51
Eclipse of September 9th, Total 52
Eratosthenes, Plate V, op. page 77
Region, Plate VI, op. page 80
Eros and the Earth, Oct. 1, 1900 to Feb. 28, 1901, Relative Positions of 151
Region, Plate VII, op. page 149
Exterior Nebulosity of the Region of the Pleiades, Plate XI, op. page 365
Foucault's Experiment 72
Goodsell Observatory Camp at Midvale, Montana, Plates XIX, XX, XXI op. pages 510, 512, 513
Harms' Novel Observatory 74
Images, Perfect and Imperfect formed by Object-Glasses 549, 550
Light Curve of X Aurigae 211
4.1904, Vulpeculæ 274
Curves of U Cephei, Mean 36
Orionis 143, 144
Mars and Saturn in Conjunction Observed in Mexico 147
Mercury at Greatest Elongation during 1904 556
Motion of the North Pole between 1890-1902 665
Neptune among the Faint Stars near Mu Geminorum, Apparent Path of 202
Occultations of Mars, Dec. 1, 1904 627
Occultations of Stars in the Hyades, Dec. 20, 1904, Plate XXII, op page 575
Path of Comet *a* 1904, Brooks 351
Pearsons, Dr. D. K., Plate X, op. page 293
Penumbral Spot of 1896 31
Planet Movements in 1904 ..... 53, 54, 55
Polar Motion, Curves of the Components of 272
Radial Velocity Curve of Beta Aurigae 215

Roberts, Dr. Isaac, Plate XVII, op. page..... 469
Rockwell, Charles Hall, Plate IX..... 262
Saturn, August 21, 1903..... 43
Solar Motion Determination Illustrations..... 311
Standard Time Belts in the United States..... 398
Star Trails Around the North Pole, Plate VIII, op. page..... 221
Stereoscope Applied to Astronomical Researches,.....318, 219, 320, 322, 323, 325
Suspected Variable in the Orion Nebula..... 143
Sunspot in 1892..... 32
Sunspot of 1903..... 31
Sunspots of November, 1903..... 66
Sunspots in December, 1903.....216, 217
Swasey Depression Range Finder, Plates XIII, XIV, XV, XVI, op. page.... 452
Swift's Comet, Plate IV, op. page..... 4
Telescope for the High School, A Three-Inch.....548, 609
Triangulation of Southern Circumpolar Stars..... 430
Venus, 1903 (Lowell)..... 188
Venus, November 21, 1903 (Wetherbee)..... 67
Vicinity of V Coronæ..... 496
UZ Cygni..... 424
V Ursæ Majoris..... 423

GENERAL INDEX TO VOLUME XII.

Abbe, Cleveland, Lack of Transparency of the Earth's Atmosphere..... 427
Algebra, Tanner's Elementary..... 629
Algol's Companion, *Journal British Astronomical Association*..... 359
Allen (O. A.) sees Auroral Band (note)..... 65
Amherst's New Observatory (note)..... 361
Andromedæ, Lambda (note)..... 432
Antliæ, S., (note)..... 498
Approximate Magnitudes of Variable Stars, 61, 141, 209, 278, 356, 421, 495, 562, 623..... 674
Arago on Newton (note) W. T. Lynn..... 626
Asteroid Hertha (135) Variable (note)..... 205
Asteroid Iris (7) Variable..... 137
Asteroids, New.....58, 205, 274, 352, 412, 490, 561, 674
Asteroids, Watson— Burt L. Newkirk..... 645
Asteroids, Watson's 22 (note)..... 429
Astronomical and Astro-Physical Society Meeting in St. Louis (note)..... 146
Astronomical and Astro-Physical Society's Next Meeting (note)..... 287
Astronomical Exhibits at St. Louis (note)..... 626
Astronomical Observations at Midvale, Mont., from Goodsell Observatory (note) 506
Astronomical Phenomena during 1904, H. C. Wilson..... 50
Astronomical Research, Endowment of— Edward C. Pickering..... 472
Astronomy in the High School, Mary E Byrd.....24, 199
Astronomy, Gore's Studies in..... 628
Astronomy, Jesuit— William F. Rigge, S. J.....303, 375
Aurigae, Light Change of X (note)..... 211
Aurigae, Radial Velocity of Beta (note)..... 215
Aurora Borealis and Electro-Magnetic Clock (note)..... 288
Auroral Arch (note)..... 218
Auroral Band seen by O. A. Allen..... 65
Dr. Stewart (note)..... 65
Barnard, E. E., Some Peculiarities of Comets' Tails and Their Probable Explanation 1
Barnard's Micrometrical Observations of the Planet Eros..... 286
Bartlett, Arthur K., Curious Optical Illusions..... 123
Solar and Sidereal Times..... 649
Becker, L., Spectrum of Nova Persei and the Structure of its Bands, as Photographed at Glasgow..... 603
Berkeley's New Students' Observatory (note)..... 359
Bickerton, A. W., Explosion of Stars..... 666
Biesbroeck, G. Van— Stereoscope Applied to Astronomical Researches..... 318
Book Notices,.....70, 218, 283, 285, 286, 291, 360, 431, 432, 628, 629
British Astronomical Association, Jan. 27,— Meeting of (note)..... 285
British Astronomical Association, Report for the Year..... 681

Brooks, Albert J., Lives of Tycho Brahe and Copernicus by Gassendo (note) 569
Brooks' Comet *a* (1904), Elements and Ephemeris....413, 415
Bruce Telescope at Yerkes,— New (note).... 363
Burnham's Double Star Measures.... 282
Burns, Gavin J., The Number of Stars.... 267
Byrd, Mary E., Anna Winlock.... 254
Astronomy in the High School....24, 199
Calculus, Granville's Differential and Integral.... 629
Callandreau, M. O., From *Nature*.... 288
Statistical Comparison of the Minor Planets and the Short Period Comets.... 117
Campbell of Lick receives the Lalande Prize (note).... 361
Campbell, Frederick, Swift's Perpetual Calendar (note).... 148
Campbell, W. W, Total Solar Eclipse of August 30, 1905.... 456
Carlisle, Clarence W., Observations with a Small Telescope.... 328
Castor, Orbit of.... 627
Celestial Photography at a High Altitude, H. C. Wilson.... 509
Cephei, Light Variations of U.. Paul S. Yendell.... 32
Cincinnati Observatory's New Telescope,— J. G. Porter.... 437
Circumpolar Region, Heliometer Triangulation of (note).... 429
Clock Stopped by Lightning (note).... 570
Coit, J. B., A Solar Prominence.... 455
Columbia University Observatory Changes (note).... 424
Comet and Asteroid Notes.....58, 136, 205, 274, 349, 412, 487, 561, 621, 671
Comet Encke, Ephemeris of....136, 489, 673
Comet 1873, II, Ephemeris of Tempel's Periodic....487, 671
1887, II, Definitive Orbit of.... 487
1889, IV, Definitive Orbit of.... 487
1894, I, (Denning), Definitive Elements of.... 58
1898, X, Definitive Orbit of.... 351
1903, *c*, (Borrelly), Photographic Observation of (note).... 281
1904, *a*, (Brooks) New, (note).... 350
Discovered by W. R. Brooks (note).... 351
Elements and Ephemeris....413, 415, 490, 672
Comet Winnecke, Ephemeris of.... 137
Comets, Motion of Short Period.... 487
Comets' Tails, Peculiarities of— E. E. Barnard.... 1
Common's 60-inch Telescope, Edward C. Pickering.... 660
Companion of Algol, Journal of the *British Astronomical Association*.... 359
Comparison of the Features of the Earth and the Moon (note).... 627
Concerning the Spectra of the New Stars,— H. Ebert.... 239
Conjunction Observed Between Mars and Saturn (note) L. G. Léon.... 147
Contraction of Gaseous Nebulae, Law of (note).... 290
Copernican and Ptolemaic Systems of Galileo,— C. C. Hutchins.... 442
Croatian Philosophical Society (note) O. Kucera.... 289
Culture Value of Mathematics and Astronomy,— William W. Payne, 585, 634
Curious Optical Illusions,— Arthur K. Bartlett.... 123
Cycle of the Polar Motion 1891-1902,— H. Kimura.... 270
Cygni, Secondary Minimum of UZ.... 424
Daniel, Zaccheus,— Suspected Variable 9.1904 Orionis.... 422
U Geminorum (note).... 280

Variable 49.1903 Orionis (note) 357
D'Auria, Luigi.— Relation of the Mass of the Universe to Stellar Dynamics. 20
Davis, Herman S.— A Lunar Rainbow (note) 501
Decennial Publications of Yerkes 432
Degree, Requirements for the Master's 387
Denning, F. R. A. S., W. F.— Markings and Rotation Period of Saturn 40
Determination of Solar Motion,— Mary W. Whitney 226, 311
the Relative Masses of 70 Ophiuchi (note) 431
Discovery of New Variable Stars (note) 497
Double Canals of Mars,— William H. Pickering 385
Double Canals and Separative Powers of Glasses,— Percival Lowell 575
Double Star Measures, Burnham's 282
Durchmusterung (note) Revision of the Cape— 686
Earth and Moon, Comparison of the Features of— 627
Earth's Rotation, Visible Proof of— (note) 71
Ebert, H., Concerning the Spectra of the New Stars 239
Eclipse Expedition of 1905, Mary Proctor 468
of Lick Observatory, The Crocker— 569
August 30, 1905, Total Solar— W. W. Campbell 456
Eclipses, Mathematical Theory of— William W. Payne 515
Elements, Comet 1887 II 487
1889 IV 487
a (1904) 413, 415
Elogy on Sir Isaac Newton, and (note) E. F McPike 504
Encke's Comet, Ephemeris of 136, 490
Endowment of Astronomical Research, Edward C. Pickering 472
Ephemeris of Comet *a* (1904) 490, 672
Encke's Comet 489, 673
Tempel's Periodic Comet, 1873 II 487, 671
Physical Observations of the Sun 204
Wolf's Comet 1884 III 360
Eros, Hinks' Reduction of the Photographs of— 501
Eros Parallax Campaign (note) 683
Explanation of the Martian and Lunar Canals, William H. Pickering 439
Explosion of the Stars, A. W. Bickerton 666
Foster, C. P., Suspected Variable in the Orion Nebula (note) 143
Franks, W. S., Dr. Isaac Roberts, F. R. S 469
Galileo, New Life of— Herbert A. Howe 80
Geminorum, U—(note) Zaccheus Daniel 289
General Notes 64, 146, 212, 280, 358, 424, 499, 568, 626, 679
Geometry by McMahon, Plane 218
Glass for Lenses, New (note) 425
Goodsell Observatory Astronomical Research Expedition (note) 506
Observers, Mountain Station for (note) 424
Gore's Stellar Heavens 70, 360
Studies in Astronomy 628
Granville Differential and Integral Calculus 629
Greenwich Astrographic Work, William W. Payne 651
Hadden, David E., Spectroscope for Small Telescope 252
Hale receives Medal, Professor G. E 212
Halley, Dr. Edmund— Eugene Fairfield McPike 453

Halley's Comet (note) Eugene Fairfield McPike..... 685
in 1835 (note) Eugene Fairfield McPike..... 571
Harms' Novel Observatory (note)..... 73
Harvard Photometry Revised (note)..... 282
Heavens, Photography of the— A. Ricco..... 521
Heliometer Triangulation of the Circumpolar Region (note)..... 430
High School, A Three-Inch Telescope for the— William W. Payne.....546, 608
Hinks, Arthur R., Reduction of 295 Photographs of Eros with a Determination of the Solar Parallax.....531, 589
Photographs of Eros (note)..... 501
Howe, Herbert A., A New Life of Galileo..... 80
Hutchins, C. C., Ptolemaic and Copernican Systems of Galileo..... 442
Important Astronomical Work in Progress, William W. Payne..... 45
Incandescent Lamp, A New— *British Journal of Photography*..... 284
International Exchange Service of the Smithsonian Institution (note)..... 284
Jacoby Promoted, Professor Harold (note)..... 424
Jesuit Astronomy, William F. Rigge, S. J., ...9, 94, 303, 375
Jupiter's Fifth Satellite, (note) Observations of..... 425
Jupiter's Third Satellite seen with naked eye (note)..... 682
Kepler's Attitude towards Astrology, F. A. Tondorf, S. J..... 299
Kimura, H., On the Six Years Cycle of the Polar Motion 1891-1902..... 270
Lack of Transparency of the Earth's Atmosphere (note) Cleveland Abbe..... 427
La Fete du Soleil (note)..... 500
Laland Prize Awarded to Campbell of Lick Observatory..... 361
Lanneau, J. F., Sunspot Maxmum..... 67
Latitude, Variation of, William W. Payne..... 662
Léon, Luis G., Mars and Saturn in Conjunction (note)..... 147
Solar Activity..... 66
Sunspots in December, 1903..... 216
The Sun in January, 1904..... 284
Leonids at Providence,— (note) W. Upton..... 67
Observed by Anne Sewell Young..... 683
The— William H. Pickering..... 530
Life Hisory of Radium (note)..... 682
Light Change X Aurigae (note)..... 211
Changes of the Variable V Ursæ Majoris..... 423
Variations of U Cephei, Paul S. Yendell..... 32
Lives of Tycho Brahe and Copernicus (note) Albert J. Brooks..... 569
Lowell, Percival— Double Canals and Separative Powers of Glasses..... 575
New Determination of the Axis of Rotation of Mars.... 428
Venus, 1903..... 184
Lunar Rainbow (note) Herman S. Davis..... 501
Lynn, W. T., Arago on Newton (note)..... 626
Magne-Crystallic Action and the Aurora, M. A. Veeder..... 182
Manora Observatory for sale (note)..... 568
Markings and Rotation Period of Saturn, W. F. Denning, F. R. A. S..... 40
Marckwick, E. E., Observations of Variable Stars..... 193
Mars, Apparent Changes in (note)..... 281
December 1, 1904,— Occultations of—..... 627
Double Canals of— William H. Pickering..... 385
New Determination of the Axis of Rotation of— Percival Lowell.... 428

Observed in 1903 by Phillips (note) 212
The Canals of— William W. Payne 365
Martian and Lunar Canals, An Explanation of— William H. Pickering 439
Recent Studies of— William H. Pickering 77
Martin, E. S., Perseids at Wilmington, N. C 499
Mass of the Universe and Stellar Dynamics, Relation of— Luigi D'Auria 20
Master's Degree Requirements, Report on— 387
Mathematical Theory of Eclipses, William W. Payne 515
Maunder, E. Walter, Sunspot Variation in Latitude 616
Maxima of UY Cygni 64, 139, 207, 276, 352, 354, 418, 498, 625, 678
RZ Lyræ 207, 279, 354, 418, 498, 564, 625, 678
Y Lyræ 64, 139, 207, 276, 352, 416, 495, 564, 625, 678
U Pegasi 64
McKenney, Anne P., What Women have done for Astronomy in the U. S ... 171
McMahon's Plane Geometry 218
McPike, Eugene Fairfield, Elogy on Sir Isaac Newton and note 504, 571
Halley's Comet (note) 685
On Halley's Comet in 1835 by Bronte 571
Remarks on Dr. Edmond Halley 453
Measures of the Rings on Saturn, F. E. Seagrave 131
Measuring the distance of the Sun by Means of the Planet Eros, H. C. Wilson 149
Mechanics of the Universe 283
Meteor, Brilliant (note) H. L. Smith 426
of September 15, 1902, E. L. Moseley 190
Meteorite, Winchell's Notes on a Brilliant 553
Meteors seen at Barre Center, N. Y., (note) 500
Wilmington, N. C., by E. S. Martin (note) 499
Mills Expedition to Southern Hemisphere, Some Results from (note) 687
Minima of Variable Stars of the Algol Type 59, 138, 206, 275, 353, 417, 491, 563, 622, 676
Moon Phases 57, 135, 204, 274, 349, 412, 483, 559, 620, 671
Moseley, E. L., Meteor of September 15, 1902 190
Motion of Short Period Comets (note) 487
Moulton, Forest R., Time 391
Naval Observatory Astronomical Club (note) 213
Nebulous Areas of the Sky, The Large— H. C. Wilson 401
New Asteroids 58, 205, 274, 352, 412, 490, 561, 674
New Glass for Lenses (note) 425
Life of Galileo, Herbert A. Howe 80
Newkirk, Burt L., Watson Asteroids 645
Newton, Elogy on Sir Isaac, Eugene Fairfield McPike 571
New Variables 61, 63, 142, 210, 279, 357, 422, 497, 565, 625
Nomenclature of 61
Notes, Comet and Asteroid 58, 136, 205, 274, 349, 412, 487, 561, 621
General— 64, 146, 212, 280, 358, 424, 499, 568, 626, 679
Planet— 57, 134, 202, 272, 348, 410, 482, 556, 668
Publisher's— 76, 148, 220, 292, 364, 436, 508, 574, 631, 688
Nova Persei, Observations of— F. E. Seagrave 358
Number of the Stars, Gavin J. Burns 267
Numbering Asteroids 58, 274, 490

Observation of Variable Stars, E. E. Markwick..... 193
Observations with a Small Telescope, Clarence W. Carlisle..... 328
Occultations of Mars, Dec. 1, 1904 (note)..... 627
Occultations of Stars in the Hyades, Dec. 20, 1904, H. C. Wilson..... 611
Occultations Visible at Washington...57, 135, 205, 274, 349, 412, 483, 559, 620, 671
O'Halloran, Rose, Some Details of the Recent Solar Cycle..... 27
Variable Star Notes..... 496
Olivier, C. P., Orionid Observations..... 680
Ophiuchi, Determinations of the Relative Masses of 70..... 431
Orbit of Castor (note)..... 627
Comet 1898 X, Definitive..... 351
Companion of Sirius..... 501
Orion, Variable Stars in the Nebula of— Edward C. Pickering..... 332
Orionids Observed at University of Va., by C. P. Olivier..... 680
Orionis, Light Curves of U— F. E. Seagrave..... 143
Parallax Campaign, The Eros (note)..... 683
Parker, D. G., The Saturnian System..... 405
Payne, William W., A Three-Inch Telescope for the High School.....546, 608
Charles Hall Rockwell..... 262
Culture Value of Mathematics and Astronomy.....585, 634
Greenwich Astrographic Work..... 651
Important Astronomical Work in Progress..... 45
Pearsons, Dr. D. K..... 345
Present Knowledge of the Sun..... 293
Recent Astronomical Research..... 89
Special Telegraphic Time Signal from the Naval Observatory 613, 684
The Canals of Mars..... 365
The Mathematical Theory of Eclipses..... 515
The Swasey Range Finder..... 450
Trails of Stars near the North Pole..... 265
Variation of Latitude..... 662
Wider Field for this Magazine..... 5
Pearsons, the Christian Philanthropist, Dr. D. K., William W. Payne..... 345
Perseids at Wilmington, N. C., seen by E. S. Martin (note)..... 499
Phenomena of Jupiter's Satellites.....416, 483, 559, 621, 670
Phoebe, Ninth Satellite of Saturn, (note), Edward C. Pickering..... 568
Photographic Plates, Estimates of Brightness on..... 500
Photography at Yerkes, Astronomical (note)..... 212
Photography of the Heavens, A. Ricco..... 521
Pickering, Edward C., Common's 60-inch Telescope..... 660
Endowment of Astronomical Research..... 472
Phœbe, Ninth Satellite of Saturn (note)..... 568
Variable Stars of Iris (7)..... 258
Variable Stars in the Nebula of Orion..... 332
Pickering, William H., An Explanation of the Martian and Lunar Canals.. 439
Recent Studies of the Martian and Lunar Canals..... 77
The Double Canals of Mars..... 385
The Leonids..... 530
Planet (470) Kilia, New Elements of—..... 137
Notes.....57, 134, 202, 272, 348, 410, 482, 556, 619, 668

Pleiades Group, Photographic Brightness of Stars in the (note)..... 570
Polar Motion during the Interval 1891-1902, H. Kimura..... 270
Polar Star Trails, William W. Payne..... 265
Porter, J. G., Cincinnati Observatory's New 16-Inch Telescope..... 437
Precession and Assyriological Discoveries, *The Observatory*..... 426
Present Knowledge of the Sun, William W. Payne..... 293
Proctor, Mary, Eclipse Expedition in 1905..... 468
Prominence, A Solar, J. B. Coit..... 453
Ptolemaic and Copernican Systems of Galileo, C. C. Hutchins..... 442
Publisher's Notices.....76, 148, 220, 292, 364, 436, 508, 574, 631, 688
Radial Velocity of Beta Aurigae (note)..... 215
Velocities of 20 Stars by Frost and Adams..... 432
Radium and the Sun's Heat, R. J. Strutt..... 75
(Note) Life History of..... 682
Range Finder, The Swasey, William W. Payne..... 450
Recent Astronomical Research, William W. Payne..... 89
Studies on the Martian and Lunar Canals, William H. Pickering.... 77
Reduction of 295 Photographs of Eros with Determination of the Solar Parallax, Arthur R. Hinks.....531, 589
Remarks on Dr. Edmond Halley, Eugene Fairfield McPike..... 453
Ricco, A., Photography of the Heavens..... 521
Rigge, S. J., William F., Jesuit Astronomy.....9, 94, 303, 375
Right Ascensions of Eros Compared Graphically, H. C. Wilson..... 167
Roberts, F. R. A. S., Dr. Isaac, W. S. Franks..... 469
Rock Pressure at Great Depths, (note)..... 679
Rockwell, Charles Hall, William W. Payne..... 262
Royal Astronomical Society of Canada Publications (note)..... 630
Sagittarii, Y. (note)..... 498
Satellites of Saturn.....485, 560
Saturn, Markings and Rotation Period of— W. F. Denning, F. R. A. S..... 40
Measures of the Rings of— F. E. Seagrave..... 131
New Faint Satellite Belonging to— Edward C. Pickering..... 499
Saturnian System, The— D. G. Parker..... 405
Saturn's Ninth Satellite (note) Edward C. Pickering..... 568
Seagrave, F. E. Light Curves of U Orionis..... 143
Measures of the Rings of Saturn..... 131
Observations of Nova Persei..... 358
Seen and Learned Abroad, T. D. Simonton.....113, 338
Simonton, T. D., Seen and Learned Abroad.....113, 338
Sirius' Companion, Orbit of the— (note)..... 501
Smith, H. L., Brilliant Meteor (note)..... 426
Solar Activity, Luis G. Leon..... 66
and Sidereal Time, Arthur K. Bartlett..... 649
Cycle, Some Details of Recent— Rose O'Halloran..... 27
Eclipse August 30, 1905, William W. Campbell..... 456
Motion, Determination of— Mary W. Whitney.....226, 311
Prominence, A— J. B. Coit..... 455
Research Expedition from Yerkes Observatory (note)..... 503
Some Details of the Recent Solar Cycle, Rose O'Halloran..... 27
Some Peculiarities of Comets' Tails and their Probable Explanation, E. E. Barnard 1

Spectroscope for Small Telescope, David E. Hadden 252
Telescopes (note) E. T. Whitelow, F. R. A. S. 363
Spectrum Analysis by Watts, Introduction to— 687
of Nova Persei and the Structure of its Bands, as Photographed at Glasgow, L. Becker 603
Stars, A Study of the Universe 285
with Variable Radial Velocity, Two— (note) 287
Statistical Comparison of the Minor Planets and the Short Period Comets, M. O. Callandreau 117
Stellar Heavens by Gore 70, 360
Stereoscope Applied to Astronomical Researches, G. Van Biesbroeck 318
Stewart sees Auroral Band, Dr. D. L., (note) 65
Strutt, R. J., Radium and Sun's Heat (note) 75
Struve of Koenigsburg, Director (note) 287
Sun, Ephemeris of Physical Observations of the 204
in January, 1904, Luis G. Leon 284
Views on the Constitution of the— Charles A. Young 221
Sunspot Maximum, J. F. Lanneau 67
Observations, 1902-3, Anne Sewell Young 214
Variation in Latitude, E. Walter Maunder 616
Sunspots in December, 1903, Luis G. Leon 216
Swasey Depression Range Finder (note) 425
Range Finder, William W. Payne 450
Swift's Perpetual Calendar, Frederick Campbell 148
Tanner's Elementary Algebra 629
Taylor's New Trigonometry 291
Telegraphic Signal from Naval Observatory, Special, William W. Payne. 613, 684
Telescope by Nolan, The 431
Common's 60-Inch— Edward C. Pickering 660
of the Cincinnati Observatory, New— J. G. Porter 437
Terminator of Venus, (note) Weston Wetherbee 67
The Canals of Mars, William W. Payne 365
The Large Nebulous Areas of the Sky, H. C. Wilson 401
The Relation of the Mass of the Universe to Stellar Dynamics, Luigi D'Auria 20
The Saturnian System, D. G. Parker 405
Three-Inch Telescope for the High School, William W. Payne 546, 608
Time, Forest R. Moulton 391
Solar and Sidereal, Arthur K. Bartlett 649
Tondorf, S. J., F. A., Kepler's Attitude towards Astrology 299
Trails of Stars near the North Pole, William W. Payne 265
Trigonometry, Taylor's New Plane 291
Tucker, R. H., Ultimate Measurement of Graduation Errors 579
Ultimate Measurement of Graduation Errors, R. H. Tucker 579
Universe Limited in Extent and Spherical in Form? Is— 69
Upton, Winslow, Leonids at Providence (note) 67
Variable in the Orion Nebula, Suspected 143
Variables, New 61, 63, 142, 210, 279, 357, 422, 497, 565, 625, 677, 678
Variables, Nomenclature of New 62
Variable Star Epsilon Aurigæ (note) 142
Notes, Rose O'Halloran 496
Stars 59, 138, 205, 275, 352, 416, 491, 562, 622, 674

Approximate Magnitudes of.....
.....61, 141, 209, 278, 356, 421, 495, 562, 623, 674
in the Nebula of Orion, Edward C. Pickering..... 332
of Short Period, not of the Algol Type.....
.....60, 140, 208, 277, 355, 419, 493, 564, 624, 675
of the Algol Type, Minima of—.....
.....59, 138, 206, 275, 353, 417, 419, 563, 622, 676
U Ursae Majoris, Light Changes of..... 423
Variability of Iris (7), Edward C. Pickering..... 258
Variation of Latitude, William W. Payne..... 662
Veeder, M. A., Magne-Crystallic Action and the Aurora..... 182
Venus, 1903, Percival Lowell..... 184
Terminator of (note) Weston Wetherbee..... 67
Vicinity of the Variable Star 15.1904 Geminorum..... 422
Views on the Constitution of the Sun, Charles A. Young..... 221
Watson Asteroids, Burt L. Newkirk..... 645
Isabella, Translation of Callandreau's Comparison of Minor Planets and Short Period Comets..... 117
Ebert's Spectra of the Stars..... 239
Watson's 22 Asteroids (note)..... 429
Watts' Introduction to Spectrum Analysis (note)..... 687
Wetherbee, Weston, August Meteors Observed (note)..... 500
Terminator of Venus (note)..... 67
What Women Have Done for Astronomy in the U. S., Anne P. McKenny.. 171
Whitelow, F. R. A. S., E. T., The Spectroscope for Small Telescopes..... 363
Whiting made Director of Whiting Observatory, Miss (note)..... 363
Whitney, Mary W., Determination of Solar Motion.....226, 311
Wider Field for This Magazine, William W. Payne..... 5
Wilson, H. C., Astronomical Phenomena during 1904..... 50
Celestial Photography at a High Altitude..... 509
Measuring the Distance of the Sun by Means of the Planet Eros 149
Nebulous Areas of the Sky, The Large..... 401
Occultations of Stars in the Hyades, Dec. 20, 1904..... 611
Winchell's Notes on a Bright Meteorite..... 553
Winlock, Anna, Mary E. Byrd..... 254
Winnecke's Comet, Ephemeris of..... 137
Wolf's Comet, 1884 III, Ephemeris of..... 360
Women Astronomers in the United States, Anne P. McKenny..... 171
Yendell, Paul S., Light Variations of U Cephei..... 32
Yerkes' New Bruce Telescope (note)..... 363
Yerkes Observatory Solar Research Expedition (note)..... 503
Young, Anne Sewell, Sunspot Observations 1902-3..... 214
Charles A., Views on the Constitution of the Sun..... 221